WHAT IS CLAIMED IS:

1.   An image processing method by which a color signal located within a first color reproduction gamut represented by a first color system is subjected to mapping conversion into a color signal located within a second color reproduction gamut represented by the first color system, wherein

a locus of a change of color in the first color reproduction gamut is represented by a curve, mapping is performed to the curve, and the mapping conversion is performed on the basis of relation of the curves before and after the mapping.

2.   A method according to Claim 1, wherein the mapping is performed such that a change rate of the curve is maintained.

3.   A method according to Claim 1, wherein the locus of the change of color in the first color reproduction gamut is obtained on the basis of surface sample points in the first color reproduction gamut.

4.   A method according to Claim 1, wherein

a first gradation line being the curve representing the locus of the change of color in the first color reproduction gamut and a second gradation line in the second color reproduction gamut are

obtained, and

the mapping conversion of the color signal in the first color reproduction gamut into the color signal in the second color reproduction gamut is performed on the basis of the second gradation line corresponding to the first gradation line relative to the color signal in the first color reproduction gamut.

5. A method according to Claim 1, wherein the curve is obtained by using at least one of a B-Spline curve, a rational B-Spline curve, a Bezier curve, and a one- or more-dimensional spline curve.

6. A method according to Claim 1, wherein
plural first color signals belonging to the first color reproduction gamut are set,
the curve is obtained on the basis of the set plural first color signals, and
in a subset of the color signals being not an empty set, the color signals being the components of the subset are constrained such that they belong to any of six hue faces of a red face, a green face, a blue face, a cyan face, a magenta face and an yellow face.

7. A method according to Claim 1, wherein, in the mapping conversion, hue adjustment to adjust two-dimensional mapping and a hue component on a lightness-

chroma plane according to the second color reproduction gamut is performed to the color signal in the first color reproduction gamut.

5   8. A method according to Claim 4, wherein, in the mapping conversion, the color signal is extracted from the second gradation line in accordance with a ratio of hue angle of the color signal on the first gradation line.

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    9. A method according to Claim 4, wherein, in the mapping conversion, the color signal is extracted from the second gradation line in accordance with a ratio of the length of the first gradation line and the length

15 from the edge point of the first gradation line to the color signal being the target of the mapping conversion result calculation.

    10. An image processing apparatus by which a

20 color signal located within a first color reproduction gamut represented by a first color system is subjected to mapping conversion into a color signal located within a second color reproduction gamut represented by the first color system, wherein

25   a locus of a change of color in the first color reproduction gamut is represented by a curve, mapping is performed to the curve, and the mapping conversion

is performed on the basis of relation of the curves
before and after the mapping.

    11. A storage medium which computer-readably
5   stores a program to achieve an image processing method
by which a color signal located within a first color
reproduction gamut represented by a first color system
is subjected to mapping conversion into a color signal
located within a second color reproduction gamut
10   represented by the first color system, wherein
    the program by which a locus of a change of color
in the first color reproduction gamut is represented by
a curve, mapping is performed to the curve, and the
mapping conversion is performed on the basis of
15   relation of the curves before and after the mapping.